

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A wireless receiving method implemented in a wireless receiving apparatus having a single MCU (microprocessor control unit), wherein after the single MCU has sequentially received signals having different frequencies transmitted from a plurality of peripheral devices in a multi-segment multi-task data processing mode and finished a process for identifying the received signals, the single MCU performs the steps of:

(a) reading a predetermined processing procedure with respect to a first signal having a first frequency from a memory;

(b) performing a first predetermined process with respect to a first signal based on the predetermined processing procedure;

(c) storing an index of a last finished step of said first predetermined process with respect to the first signal in the memory, after at least one step of the first predetermined process has been performed with respect to the first signal;

(d) reading the predetermined processing procedure with respect to a second signal having a second frequency different from the first frequency from the memory;

(e) performing a second predetermined process with respect to the second signal based on the predetermined processing procedure;

(f) storing an index of a last finished step of said second predetermined process with respect to the second signal in the memory, after at least one step of the second predetermined process has been performed with respect to the second signal;

(g) determining whether all predetermined processes have been performed on the signals based on the predetermined processing procedure with respect to the signals; and

(h) sending all of the processed signals to a computer for processing based on data contained in the signals if a result of the determination in step (g) is positive, and otherwise looping back to step (a) and performing additional steps of any processing procedures that have not yet been completed.

2. (Previously Presented) The method of claim 1, further comprising the steps of:

(i) reading a signal conversion table stored in the memory, after the signal has been received;

(j) determining whether a type of the received signal has a corresponding type of a signal recorded in the conversion table;

(k) determining whether a length of the received signal is correct based on data of a corresponding signal recorded in the conversion table, if a result of the determination in step (j) is positive; and

(l) decoding the signal based on a corresponding decoding procedure recorded in the conversion table if a result of the determination in step (k) is positive, and sequentially reading components of the decoded signal, and sending all of the processed signals to the computer so that a CPU (central processing unit) of the computer is capable of processing based on data contained in the signal.

3. (Previously Presented) The method of claim 2, further comprising the step of, if the result of the determination in step (j) is negative, discarding the signal so as to continue to receive signals.

4. (Previously Presented) The method of claim 2, further comprising the step of, if the result of the determination in step (k) is negative, discarding the signal so as to continue to receive signals.

5. (Original) The method of claim 2, wherein the processing based on data contained in the signal comprises a first processing with respect to a wireless peripheral device corresponding to the signal.

6. (Original) The method of claim 2, wherein the processing based on data contained in the signal comprises a second processing with respect to an instruction or data corresponding to the signal.

7. (Currently Amended) A wireless receiving apparatus comprising:

a signal receiving circuit for receiving signals having different frequencies from a plurality of peripheral devices and classifying the signals based on the frequencies;

a memory for storing data and a conversion table which is capable of recording types, processing procedures, and decoding procedures of the plurality of signals; and

an MCU (microprocessor control unit) electrically coupled to the signal receiving circuit, the memory, and a computer respectively so that the MCU is capable of receiving the signals from the peripheral device, wherein the received signals are sent to the MCU for identification, and by utilizing a multi-segment multi-task data processing the MCU is capable of reading the corresponding processing procedure and decoding procedure from the memory, performing a first predetermined process with respect to a first signal having a first frequency based on the processing procedure for the first signal after at least one step has been performed with respect to the first signal, storing in the memory an index of a last finished step performed with respect to the first signal, performing a second predetermined process with respect to a second signal having a second frequency different from the first frequency based on the processing procedure for the second signal after at least one step has been performed with respect to the second signal, storing in the memory an index of a last finished step performed with respect to the second signal, and repeating until a set of steps have been performed with respect to the first and the second signals, the MCU continuing to perform steps immediately by following the indices of the previous set of steps which are stored in the memory for carrying out a next set of steps, repeating until all of the signals have been processed, and finally sending all of the processed signals to the computer for processing based on data contained in the signals.